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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,627	08/13/2001	David C. Banks	112-0032US	9041

29855 7590 11/14/2006

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EXAMINER	
NGO, NGUYEN HOANG	
ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/929,627	BANKS ET AL.	
	Examiner	Art Unit	
	Nguyen Ngo	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3,5,7-11,13,18,23-25,27-36 and 38-57* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *3,7-11,13,18,23-25,27-36 and 38-53* is/are allowed.

6)☒ Claim(s) *5 and 54* is/are rejected.

7)☒ Claim(s) *55-57* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This communication is in response to the amendment of 9/05/2006. Accordingly, Claims 1-57 are currently pending in the application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogawa et al. (US 6330242) in view of Terashita et al. (US 5844903), hereinafter referred to as Ogawa and Terashita.

Regarding claim 5, Ogawa discloses a method to transfer an IP packet from a transmission source gateway to a transfer designation gateway by way of ATM nodes (a

method of sending Fibre Channel data frames (IP packets) through a Fibre Channel switch, the Fibre Channel switch comprising a plurality of small switches (ATM nodes as seen in figure 1), abstract). Ogawa further discloses the method of routing connectionless packets in the ATM network and of an IP packet containing an IP header comprising transmission source IP address and a destination IP address (Fibre Channel Data frames having a source and a destination, col4 lines 59-63) and further discloses that each ATM node detects a top cell of the packet from the ATM cells transmitted so as to perform routing of ATM cells toward the next ATM node in accordance with a destination address (the destination (destination IP address) being used for routing the Fibre Channel data frame (IP packet), col4 lines 35-39). Ogawa further discloses;

of a packet reception buffer (located in nodes of the system) which receives packets from an existing user LAN (receiving the Fibre Channel data frame (packets) from the source (user LAN) at a first small switch, col5 lines 31-35).

of a VPI/VCI transformation block that transform the VPI/VCI (choosing a first virtual channel from a set of possible virtual channels (done by VPI/VCI transformation block), each virtual channel of the set of possible virtual channels being available for use with generic data flow, figure 7 and col7 lines 40-45).

that at ATM node 8b, the BOM cell detection block detects a top cell of the cell stream of the received IP packet (Fibre Channel frame). So, the destination address detection block detects an address of the "passing" ATM node 8c and in accordance with the destination address read, all of the cells of the same IP packet are subjected to VPI/VCI transformation (providing information in addition to the Fibre Channel data

frame (IP datagram 2a of figure 2) to identify the first virtual channel (VPI/VCI of ATM header of ATM cell 2c of figure 2) and then the cell stream is transferred to the ATM node 8c (sending the Fibre Channel data frame and the addition information identifying the first virtual channel (ATM cell containing VPI/VCI (addition information) and a separate IP datagram located in the data field (Fibre Channel data frame) from the first small switch (ATM node 8b) to a second small switch (ATM node 8c) as seen from figure 2 and col8 lines 14-23). It is noted that an ATM switch may be implemented with the use of optical fibers as well known in the art.

Ogawa however fails to explicitly disclose wherein the first virtual channel is chosen based on the identity of the source of the Fibre Channel data frame. Ogawa however discloses a source routing method, which is designed such that a transfer path is designated by a transmission source for transfer of an IP packet, is used to designate the transfer path (correlating to a virtual channel) in response to the policy of the transmission source and is used to configure a specific service network on the existing network (col1 lines 45-50). Thus providing the motivation to incorporate the concept of choosing a first virtual channel based on the identity of the source of the frame in order to correctly and efficiently, designate the transfer path on the network. It should further be noted that the concept of source base routing is a well-known technique in the art.

Terashita further discloses that source routing is a method of control on frames transferred between segments by using routing information recorded in the frames

(identity of the source) and that in source routing method, a "route" through which a frame passes from a sending station to a receiving station is represented by a string of root identifier (identity of the source (root) of the Fibre Channel data frame, col5 lines 5-16). It would thus be obvious to incorporate the concept of defining routes/transfer paths based upon the source information (root) in the header as disclosed by Terashita into the method for providing the transfer of an IP packet from a transmission source to a destination by way of ATM nodes as disclosed by Ogawa in order to correctly and efficiently set up a transfer path on the network.

4. Claim 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al. (US 6330242) in view of Nishimura et al. (U.S Patent No.2004/0202108), hereinafter referred to as Ogawa and Nishimura.

Regarding claim 54, Ogawa discloses a system of loose source routing method to transfer an IP packet from a transmission source gateway to a transfer designation gateway by way of ATM nodes (A Fibre Channel switch (system) for switching Fibre Channel data frames, abstract). Ogawa further discloses that the system comprises;

of a transmission source gateway which receives IPP packets from the user LAN (a first small Fibre Channel switch, col4 lines 21-24).

of ATM nodes which are arranged in the ATM network in direction from the transmission source gateway to the transfer destination gateway (a second small Fibre

Channel switch (ATM node) coupled to the first small Fibre Channel switch, col4 lines 31-34). Ogawa further discloses that each node in the system comprises;

reception blocks which work as an input interface unit and transmission block which work as an output interface unit (a plurality of ports including a plurality of external ports (reception block) for coupling to external devices (user LAN) and a plurality of internal ports (transmission blacks and reception blocks between nodes) for connection to a small Fibre Channel switch, figure 5 and col5 lines 56-63).

of routing connectionless packets in the ATM network and of an IP packet containing an IP header comprising transmission source IP address and a destination IP address (Fibre Channel Data frames having a source and a destination, col4 lines 59-63) and further discloses that each ATM node detects a top cell of the packet from the ATM cells transmitted so as to perform routing of ATM cells toward the next ATM node in accordance with a destination address (logic operable to determine an identification of a destination of a Fibre Channel data frame (IP packet) for routing purposes based on the destination address (IP address) of the frame, col4 lines 35-39). Ogawa further discloses;

of a VPI/VCI transformation block that transform the VPI/VCI (determine an identification of a virtual channel available for general data flow to apply to received Fibre Channel data frames (VCI transformation and encapsulation of the IP packet), figure 7 and col7 lines 40-45).

of having the ATM node 1b (first small Fibre Channel switch) detect the destination IP address of the detected BOM cell 3a and determines if it coincides with

an address value of the ATM node 1b and that in accordance with the destination address read from cell 3a, all the cells belonging to the same IP packet (based on destination), are subjected to VCI transformation (first switch uses a first basis (IP destination of cell 3a) to identify the virtual channel, col6 lines 43-51) which are then transferred to the ATM node 1c (second small Fibre Channel switch). Ogawa further discloses that at ATM node 1c (second switch), the destination address detection block detect the destination address of the cell 3b (different basis) and in accordance with the destination address from the cell 3b, the cell stream is subjected to VPI/VCI (the second small Fibre Channel switch uses a second, different basis (different destination address) to identify the virtual channel, col6 lines 52- col7 lines 5). It is noted that an ATM switch may be implemented with the use of optical fibers as well known in the art.

Ogawa however fails to disclose the specific limitation of having a plurality of buffers, each buffer associated with a respective virtual channel.

Nishimura however discloses of an ATM switch that includes a buffer unit having individual VC queues each corresponding to each virtual channel for storing a packet (each buffer associated with a respective virtual channel, page 5 [0075]). It would thus be obvious to a person skilled in the art to incorporate the method to store packets in respective queues associated with a virtual channel as disclosed by Nishimura into the method for providing the transfer of an IP packet from a transmission source to a destination by way of ATM nodes as disclosed by Ogawa, to effectively carry out traffic control (congestion prevention) and manage the ATM cells in a switch.

Allowable Subject Matter

5. Claims 55, 56, and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 3, 7-11, 13, 18, 23-25, 27-31, 32-36, 38-45, 46-49, and 50-53 are allowed.

7. Claims 23 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose **a memory storing an identity of a virtual channel associated with each source port and available for general data flow; and to retrieve a first virtual channel identifier identifying a first virtual channel associated with the first source port from the memory.** It is noted that the closest prior art Ogawa (US 6330242) shows a system and method for a loose source routing method which is provided to transfer an IP packet from source to destination comprising having the IP packet (Fibre Channel data frame) be dissolved into ATM cells which comprises the IP packet (including destination address) and the VCI to the next passing node. However the stated prior art fails to disclose or render obvious to the above underline limitations as claimed.

8. Claims 32 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose **determining which port and an identity of a virtual channel to output the Fibre Channel data frame on and outputting the Fibre Channel data frame and the additional information through the determined port.** It is noted that the closest prior art Ogawa (US 6330242) shows a system and method for a loose source routing method which is provided to transfer an IP packet from source to destination comprising having the IP packet (Fibre Channel data frame) be dissolved into ATM cells which comprises the IP packet (including destination address) and the VCI to the next passing node. However the stated prior art fails to disclose or render obvious to the above underline limitations as claimed.

9. Claims 46 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose **a memory storing an identity of a virtual channel associated with each external port and available for general data flow; and to determine an identification of a virtual channel on which to output received Fibre Channel data frame.** It is noted that the closest prior art Ogawa (US 6330242) shows a system and method for a loose source routing method which is provided to transfer an IP packet from source to destination comprising having the IP packet (Fibre Channel data frame) be dissolved into ATM cells which comprises the IP packet (including destination address) and the VCI to the next passing node. However the stated prior art fails to disclose or render obvious to the above underline limitations as claimed.

10. Claims 50 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly disclose **determining an identification of a virtual channel available for general data flow on which to output received Fibre Channel data frames, the determination of the virtual channel based on the source port receiving the Fibre Channel data frames.** It is noted that the closest prior art Ogawa (US 6330242) shows a system and method for a loose source routing method which is provided to transfer an IP packet from source to destination comprising having the IP packet (Fibre Channel data frame) be dissolved into ATM cells which comprises the IP packet (including destination address) and the VCI to the next passing node. However the stated prior art fails to disclose or render obvious to the above underline limitations as claimed.

Response to Arguments

11. Applicant's arguments filed 9/05/2006, with respects to claim 54, have been fully considered but they are not persuasive.

12. The applicant submits that Ogawa does not teach or suggest that the first small Fibre Channel switch use a first basis to identify the virtual channel and the second small Fibre Channel switch use a second, different basis to identify the virtual channel (claim 54). As stated in the office action and agreed upon by the applicant (see remarks), Ogawa discloses that node 1b uses cell 3a and node 1c uses cell 3b to identify the virtual channel. Node 1b detects the top cell 3a and uses the destination

address to do VPI/VCI transformation whereas Node 1c uses the new top cell 3b to determine the destination address (which is a different destination address) for VPI/VCI transformation. Applicant submits that both nodes 1b and 1c uses the same basis, namely destination address in the top cell present. Examiner posits that it is not unreasonable to interpret the destination addresses (which is clearly shown to be different as cell 3a and 3b have different destination addresses for VPI/VCI transformation) used to correlate to different basis. It is further noted that it is not clearly stated in the claims of the meaning of different basis, thus Examiner interprets different basis to mean the different destination addresses used in node 1b and 1c to determine the virtual channel. It should further be noted that claim limitations are interpreted in the broadest possible manner.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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